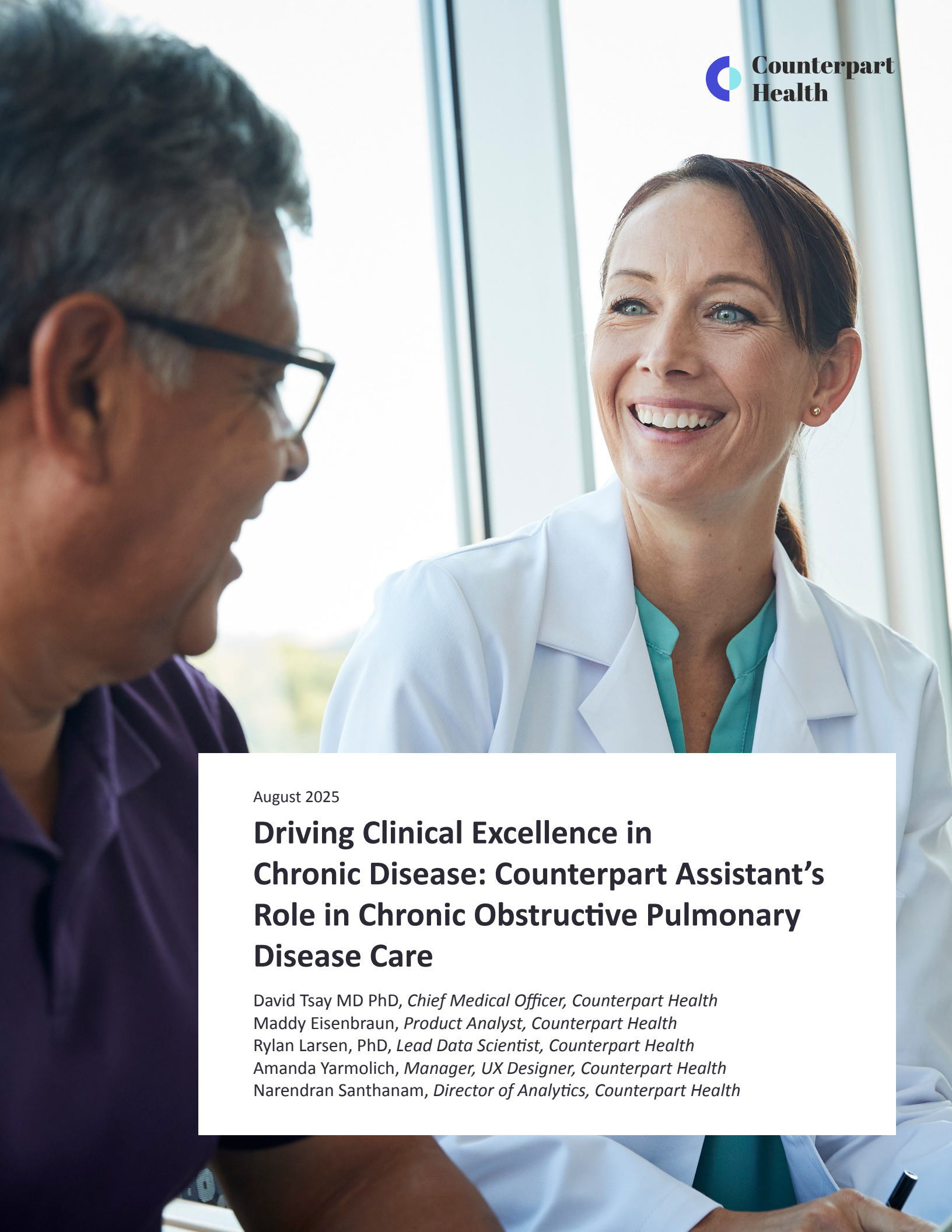

Counterpart Health

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Driving Clinical Excellence in Chronic Disease: Counterpart Assistant's Role in Chronic Obstructive Pulmonary Disease Care

David Tsay MD PhD, *Chief Medical Officer, Counterpart Health*
Maddy Eisenbraun, *Product Analyst, Counterpart Health*
Rylan Larsen, PhD, *Lead Data Scientist, Counterpart Health*
Amanda Yarmolich, *Manager, UX Designer, Counterpart Health*
Narendran Santhanam, *Director of Analytics, Counterpart Health*

Executive summary

Counterpart Health empowers primary care providers (PCPs) to better manage chronic diseases such as chronic obstructive pulmonary disease (COPD) by leveraging its flagship software platform, Counterpart Assistant (CA):

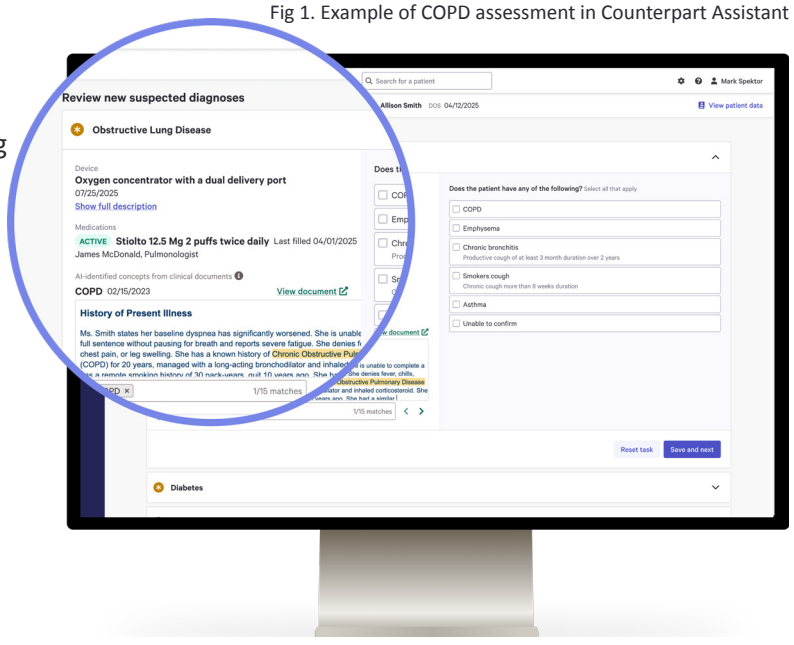
- CA provides actionable insights at the point-of-care, which supports earlier detection of chronic disease, tracking of disease progression and severity, and guideline-based treatment. COPD was identified and managed at a significantly higher rate in members who had a relationship with a PCP who uses CA versus members who did not.
- A relationship with a PCP who uses CA was correlated with better clinical care for COPD patients enrolled in Clover Health's Medicare Advantage (MA) plans, including higher rates of outpatient pulmonology visits (18% higher).
- A relationship with a PCP who uses CA was also correlated with better clinical outcomes, including a lower average number of all-cause inpatient hospitalizations (15% lower) and 30-day readmissions (18% lower).

Counterpart Assistant supports clinical excellence in COPD management

Counterpart Health, via CA, facilitates better chronic disease management by focusing on prevention, earlier detection, and longitudinal management. COPD affects nearly one in nine Medicare beneficiaries, making it one of the most common chronic illnesses in this population [1]. In 2021, COPD was responsible for 1.5 million Medicare acute inpatient admissions nationwide, with almost one-fifth of patients hospitalized for COPD readmitted within 30 days [2]. COPD members represent a high risk population where high quality, cost-effective management is essential, since these patients often have multiple comorbid conditions (over 93% of COPD patients have 4 or more chronic conditions) [3]. Effectively managing this condition demands a precise level of ongoing care to significantly reduce complications like hospitalizations. Beyond simply maintaining a patient's functional capacity and well-being, robust COPD management is crucial for controlling overall healthcare costs and providing value-based care.

PCPs across Clover Health's Medicare Advantage network rely on CA to surface real-time, patient-specific insights that help them spot, manage, and treat chronic conditions such as COPD earlier in their course. By fusing dozens of health-data streams with up-to-date clinical guidelines, CA delivers actionable recommendations right at the point of care. Prior analyses have linked CA use to better medication adherence and earlier detection of illnesses such as diabetes and chronic kidney disease[1]. A recent analysis also demonstrated an association between having a relationship with a PCP who uses CA and fewer hospitalizations and readmissions in congestive heart failure patients. We hypothesized that a patient relationship with a PCP who uses CA might similarly be correlated with better clinical care and outcomes for COPD patients.

Fig 1. Example of COPD assessment in Counterpart Assistant



[1] For more details, download previous whitepapers on CA's impact on Clinical Quality/HEDIS, Diabetes, Chronic Kidney Disease, Congestive Heart Failure, and Medication Adherence at https://www.counterparthealth.com/results.

This case study examines CA's potential impact on COPD diagnosis identification and management within Clover Health's Medicare Advantage population. Notably, a relationship with a PCP who uses CA was correlated with greater identification of a COPD diagnosis in new members without previously known COPD, and a higher average number of outpatient pulmonologist visits in 2024 among members with a COPD diagnosis. Moreover, a relationship with a PCP who uses CA was also correlated with a lower average number of inpatient hospitalizations and 30-day readmissions in 2024 among such members with COPD.

Counterpart Assistant supports prevention, detection, and management of chronic disease

- Earlier detection and screening
- Evidence-based clinical guidelines
- Clinical insights on disease progression
- Real-time insights for hospitalizations
- Transitions of care
- Readmission prevention and support
- Medication reconciliation
- Annual vaccinations

Supporting identification of COPD

Effective chronic disease management is essential to achieving success in value-based care, directly influencing patient outcomes and addressing complex health requirements. The first step in effective clinical care is early identification of chronic disease in order to stabilize and prevent progression to poor outcomes. We thus first analyzed whether members without a previous documented diagnosis of COPD were being subsequently diagnosed with COPD at higher rates when in the care of PCPs who used CA.

To assess whether having a PCP who uses CA is correlated with more frequent diagnosis of previously undiagnosed COPD, we analyzed members who joined a Clover Health Medicare Advantage plan from a different Medicare Advantage plan and did not have a previous documented COPD diagnosis upon joining the Clover Health plan. We defined the "New Member CA Cohort" as those members among this population who were attributed to a PCP who was live on CA, and the "New Member Non-CA Cohort" as those members who were not and did not receive any CA visit[2]. Members in the New Member CA Cohort were more likely to have COPD diagnosed within the first year after joining a Clover Health plan compared to members in the New Member Non-CA Cohort (Figure 2, 9.3% vs 5.3%, P<0.005, Chi-Squared test). These findings were similar when we calculated new diagnoses of COPD within 2 years and 3 years of joining a Clover Health Medicare Advantage plan. At 2 years, the percent of members diagnosed with COPD in the CA Cohort was 13.2% vs 8.4% in the Non-CA COPD Cohort (P<0.001, Chi-Squared test). Similarly, at 3 years, the percent of members diagnosed with COPD in the CA Cohort was 14.7% vs 9.5% for members in the Non-CA Cohort (P<0.001, Chi-Squared test). To investigate whether this difference was attributable to a higher prevalence of COPD within the New Member CA Cohort vs the New Member Non-CA Cohort, we examined the rates of previously diagnosed COPD (prior to joining Clover Health) of all members attributed to a PCP who were live on CA vs those who were not, and found that the baseline prevalence of COPD was not higher (12.3% for the former group vs 17.4% for the latter group).

Higher rates of patients newly diagnosed with COPD with CA PCPs vs those without

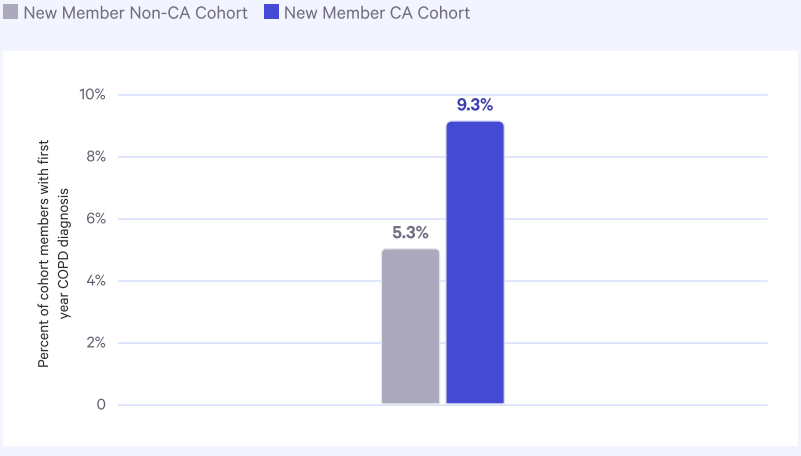


Figure 2

[2] One constituent of providers that regularly use CA are those providers employed by Clover Health or its affiliates ("Clover-Employed Providers"). In an effort to disassociate potential impact of having a relationship with a Clover-Employed Provider from the potential impact of CA, specifically, our study excluded members who were attributed to a Clover-Employed Provider. In determining the PCP to which a member was attributed, if any, we used the most recent attribution data available from the Clover MA plans. We then evaluated whether that PCP was "live" on CA during the relevant period, meaning the PCP had an actively registered CA user account during the period.

Enhancing care access for patients with COPD

Higher access to specialty care is critical particularly for those patients with advanced disease and higher risk: the 2025 Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines advise that primary-care clinicians consider referral to specialty care for those with disproportionate symptoms, high exacerbation risk, significant comorbidities, or complications beyond standard outpatient management [4]. Similarly, US clinical societies such as the American Thoracic Society, American College of Chest Physicians, and American College of Physicians, jointly recommend for those with severe COPD to be considered for advanced therapies and rehabilitation [4]. Identifying patients with COPD and referring those with severe disease for specialty management is one of the most effective strategies, both clinically and in terms of cost-effectiveness.

To evaluate whether a relationship with a PCP who uses CA was correlated with improved outcomes, we examined healthcare utilization data among two cohorts of patients who were Clover MA plan members in 2024, and for whom Clover data reflected a COPD diagnosis: (1) members attributed to a PCP live on CA in 2024 (the "CA COPD Cohort"); and (2) members who did not have any CA touch in 2024, and were attributed to a PCP that was not live on CA in 2024 (the "Non-CA COPD Cohort")[3].

Specifically, we analyzed the average number of outpatient pulmonologist visits[4] among these cohorts (Figure 3). Pulmonary specialist consultation and ongoing management are particularly valuable for COPD patients with severe disease, promoting care aligned with current clinical guidelines.

In our analysis of pulmonary specialist care, we observed that members in the CA COPD Cohort were slightly less likely overall to have established care with a pulmonary specialist (18.6% with at least 1 visit or more, compared to 22.7% in the non-CA COPD Cohort, $p < 0.0001$ Chi-Squared test), but had an 18.4% higher average number of visits to pulmonary specialists overall (0.58 visits on average per member CA COPD Cohort vs 0.49 visits on average in the non-CA COPD Cohort, $p < 0.0001$ both Poisson Rate test and Chi-Squared Test, Figure 2). Examining only those members that established care with a pulmonary specialist (1 or more visits in 2024), the average number of visits in the CA COPD Cohort was 47.6% higher than in the non-CA Cohort (CA COPD Cohort with 3.1 avg number of visits versus non-CA COPD Cohort with 2.1 avg number of visits, $p < 0.0001$ Poisson Rate Test). Thus this data indicates that while the rate of overall pulmonary specialty establishment of care was lower, members in the CA Cohort who did establish pulmonary specialist care had a higher number of such specialist Visits, suggesting that these were

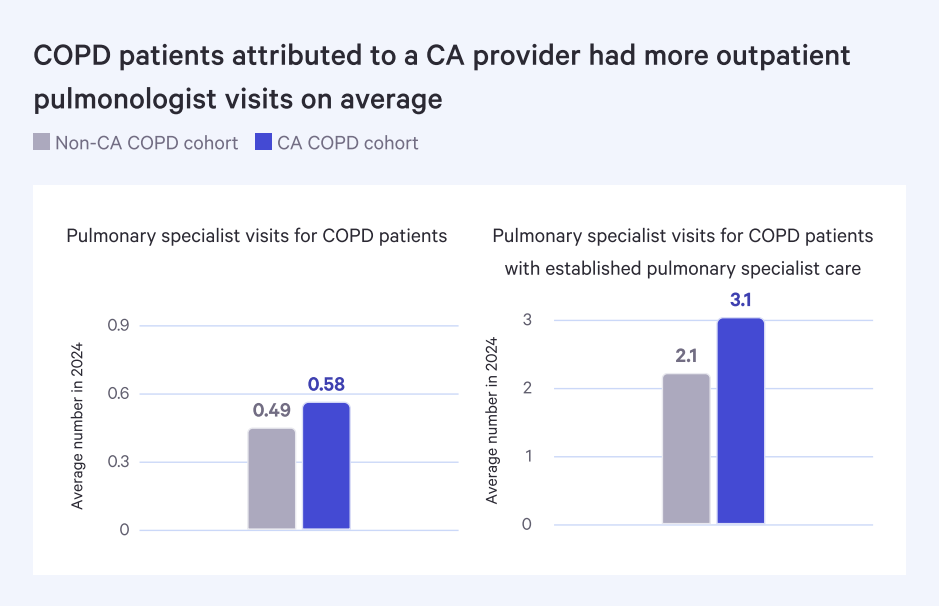


Figure 3

[3] See footnote 2 regarding cohort definitions. To be included in either cohort, Clover data must have reflected a COPD diagnosis prior to 2025.
[4] For purposes of this study, a patient was considered to have had an outpatient pulmonologist visit if the Clover MA plan had received a claim for the member with a 2024 date of service from a servicing clinician whose primary speciality is pulmonology, including one or more of the following CPT codes: 99202, 99203, 99204, 99205, 99211, 99212, 99213, 99214, 99215.

members with more severe disease. We also observed that the higher average number of pulmonary specialist visits was driven by members with high utilization of such specialist visits: members in the CA COPD Cohort were 43.2% more likely to have 3 or more pulmonary specialist visits (CA Cohort 41.8% of those with established pulmonary specialty care vs non-CA Cohort 29.2%, $p < 0.0001$) and 334% more likely to have bimonthly or greater visit frequency (6 visits or more annually) compared to members in the non-CA Cohort (for 6 or more visits, CA Cohort 12.6% of those with established pulmonary specialty care, versus 2.9% in those with non-CA, $p < 0.001$). More frequent specialty care for those with advanced disease can be beneficial in terms of maintaining a stable respiratory status and prevention of exacerbations that lead to hospitalization.

Counterpart Assistant use correlated with lower hospitalization rates

COPD-related acute inpatient hospitalizations impose a massive burden on the healthcare system, with over 1.8 million correlated hospitalizations in 2021 in the US, 86.4% of which were covered by Medicare [5]. Recent clinical literature is indicative that a higher number of outpatient pulmonary visits is correlated with reduction of hospitalization odds [6, 7]. We hypothesized that given the higher average number of outpatient pulmonology visits among members in the CA COPD Cohort compared to members in the non-CA COPD Cohort, a relationship with a PCP who uses CA may also be correlated with fewer hospital admissions and readmissions.

In our analysis, we observed that the average number of all-cause 2024 inpatient hospitalizations among members in the Non-CA COPD Cohort was 0.33 compared to 0.28 for the CA COPD Cohort (Figure 4, 15.1% lower, $p < 0.0001$). In addition, 21.0% of the Non-CA COPD Cohort had 1 or more hospitalizations in 2024 versus 17.6% of the CA COPD Cohort ($p < 0.0001$). 30-day readmission data reflected a similar association: the Non-CA COPD Cohort showed an average number of 30-day readmissions of 0.22 compared to 0.18 for the CA COPD Cohort (18% lower, $p < 0.001$). 11.3% of the Non-CA COPD Cohort had 1 or more 30-day readmissions versus 9.6% for the CA COPD Cohort ($p = 0.001$ Chi-squared). These results reflected a significant association between having a relationship with a CA provider and lower hospitalizations and readmissions.

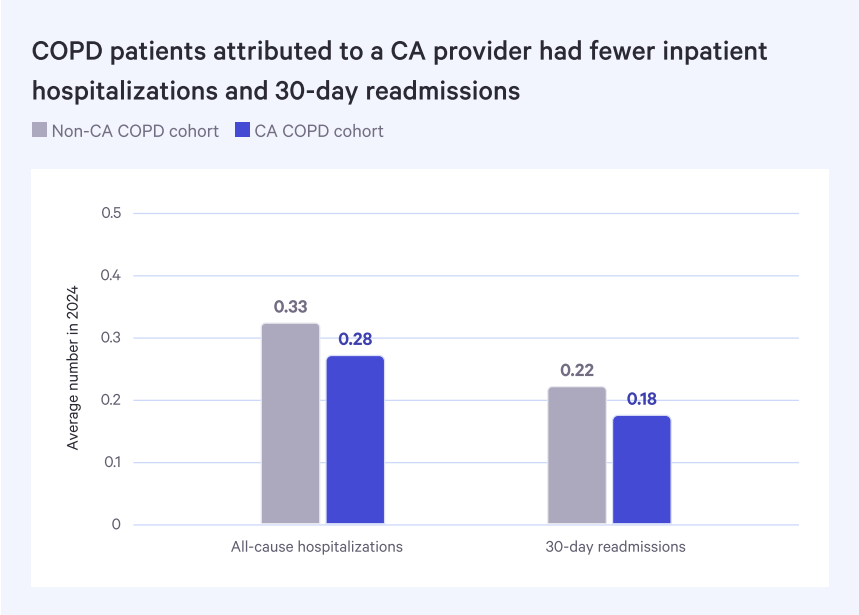


Figure 4

Counterpart Assistant: A transformative platform for detecting and managing chronic disease

In conclusion, CA's focus on early detection, tracking of disease progression and severity, and proactive interventions underscores its role in enabling value-based care at the point of care. This case study validates the Clover Health plans' experience of CA as a transformative platform that empowers PCPs to prevent, detect, and manage chronic diseases, such as COPD. The data presented demonstrates that a COPD patient's relationship with a PCP that uses CA is correlated with more outpatient pulmonology specialist visits on average, and with a higher likelihood of having frequent follow up longitudinally, as defined as 3 or more visits.

The data also reflects fewer all-cause and 30-day hospital readmissions among COPD patients attributed to a PCP who utilizes CA. This notable difference in hospitalizations strongly suggests that CA helps support a crucial shift towards proactive and longitudinal care strategies, and is consistent with our prior analyses in high risk chronic conditions such as heart failure.

Limitations of this study interpretation include the retrospective nature of this real-world data analysis in which there is no control over data collection or exposure variables. While this analysis attempts to limit bias by comparing cohorts in which CA usage by their PCP is the primary difference, the nature of this retrospective study design means there may be other influencing factors not captured in the dataset.

This case study builds on earlier substantive work by demonstrating how CA can significantly enhance patient outcomes and streamline healthcare delivery through proactive, continuous clinical care—fundamental best practices for managing complex chronic conditions.

Counterpart Assistant generates actionable clinical insights through aggregation, distillation, and curation of health data streams and leveraging proprietary AI technology.

Counterpart Assistant facilitates care delivery for chronic conditions by supporting monitoring of disease progression and best practices for specialty referrals, based on individual patient context.

Use of Counterpart Assistant can improve chronic disease outcomes and reduce healthcare burden through proactive management that can lead to fewer acute episodes requiring hospitalization.

Methods and statistical analyses

All analyses examined diagnosis and claims data from Clover Health Medicare Advantage plan members for whom this data was available. For the analyses on CA impact on members with COPD, we examined clinical outcomes of interest, specifically, specialist visits, hospitalizations, and readmissions, event counts for each member over a defined measurement period of 12 months in the 2024 calendar year. For analyses on COPD diagnostic rates for new members to Clover Health MA without prior documented COPD, the study utilized data from calendar year 2022 onwards.

Appropriate statistical methodology was utilized to determine the significance of our findings utilizing standard Python libraries, including NumPy for data handling, SciPy for the χ-square and Fisher tests, and Statsmodels for Poisson and negative-binomial regressions. Event counts for clinical outcomes were analyzed as discrete event counts. Because each subject contributed observations over an equal exposure window (one study period per person), the primary comparison of interest was the mean event rate between cohorts. To test for statistical significance between the rates, we modeled counts with a Poisson distribution and tested the null hypothesis of equal rates using a two–sample Poisson rate test. Given that many of our datasets had large variance exceeding the mean, we also performed sensitivity analysis by additionally checking statistical significance with a negative-binomial generalized linear model.

Recognizing that differences between the cohort outcomes might extend beyond the means, we also performed a Chi-Squared test of independence on the full contingency table of event count groups. This non-parametric test evaluates whether the entire distribution of counts differs, capturing shifts in both the probability of having any events and the probabilities of higher-order counts. Because very high counts were sparse, we performed two versions of this test: full K-level table using all distinct count categories; and collapsed 2 × 2 table (0 vs ≥ 1 events, or another clinically relevant threshold) to isolate differences in event incidence. Significance for tests was assessed at $\alpha = 0.05$ (two-sided).

Further sensitivity analysis was performed to examine for any differences between cohorts. When comparing member attributes in CA COPD Cohort vs those in the non-CA COPD Cohorts, there were no substantive differences in age (CA 74.5 years old vs non-CA 74.8 years old), sex (CA 51.3/48.7 female/male ratio vs non-CA 53.2/46.8), or degree of socioeconomic disadvantage (Area Deprivation Index or ADI in CA 6.25 vs non-CA 6.57), or historical comorbidities as measured by Charlson or Elixhauser scores (Charlson 2.89 vs 2.81, Elixhauser 4.23 vs 3.87). When subgrouping to only those members in the bottom quartile of socioeconomic disadvantage (ADI 8-10), our analytic findings below on clinical outcomes remained consistent and in fact observed a slightly larger impact in inpatient hospitalizations (non-CA 0.37 vs CA 0.3, 23, ~19% difference) and 30-day readmissions (non-CA 0.27 vs CA 0.2, ~26% difference). Similarly, we tested for any member attribute differences in the new member CA and new member non-CA Cohorts including age (CA 53.3 vs non-CA 46.7 years), sex (CA 56.2/43.8 female/male ratio vs non-CA 53.2/43.8), ADI (CA 6.5 vs non-CA 6.0), or smoking status (CA 41% current or former smokers, non-CA 67%) that might explain any systematic difference in propensity for COPD prevalence.

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